AMENDMENTS TO SPECIFICATION:

1. Please replace the paragraph beginning at page 2, line 30, which starts with "One approach to addressing this issue is shown in U.S. Pat. 5,977,839"**, with the following amended paragraph:**

One approach to addressing this issue is shown in U.S. Pat. 5,977,839 to Tsumura in which an oscillator having both temperature compensation control and AFC control is shown. In this case, Tsumura adds the temperature compensation signal and the AFC control signal to form one composite control signal that is applied to a frequency control input of an oscillator. To reduce the amount of interference between the temperature compensation control operation and the AFC operation, Tsumura uses a system in which the temperature compensation circuit and the AFC control circuit take turns separately observing and modifying the oscillator's operation. That is, Tsumura's system first holds the output of the AFC circuit constant while the temperature compensation circuit is operating, and then holds the output of the temperature compensation circuit constant while the AFC circuit is operating. As a result, however, Tsumura suggests converting the control signals from the temperature compensation circuit and from the AFC circuit into digital form in order to hold the respective control signals in digital latches, and to more easily sum the control signals from the temperature compensation and AFC circuits. This, of course, also requires a digital-to-analog converter in order to apply an analog representation of the composite (i.e. summed) digital control signals to the frequency control input of the oscillator.

2. Please replace the paragraph beginning at page 3, line 18, which starts with "A method of improving the precession of an oscillator"**, with the following amended paragraph:**

A method of improving the precession of an oscillator so as to reduce the need for much tuning later when in normal use, is to fine tune the oscillator's operating conditions at the manufacturing stage prior to it being shipped to a customer. U.S. Pat. 6,323,739 to Andrews shows a system wherein a reference signal, A/D converter, ROM, and D/A converter are used to fine tune an oscillator while it is still at the manufacturing stage. That is, the oscillator is activated and its performance is ~~fined~~ fine tuned at the manufacturing stage using the reference signal to select appropriate bias levels that pull the oscillator's frequency until a desired target frequency is achieved. The appropriate bias levels are stored in the

ROM, and thus optimal bias conditions for high precision operation are fixed into the oscillator prior to it being shipped to a customer.

3. Please replace the paragraph beginning at page 3, line 30, which starts with " Andrews uses load pulling to alter the frequency of his oscillator **", with the following amended paragraph:**

Andrews uses load pulling to alter the frequency of his oscillator at the manufacturing stage. Load pulling typically provides only a very small tuning range, and ~~subsequently~~ consequently Andrews uses this load pulling technique only at the manufacturing stage to fine tune the oscillator to the target frequency, and does not rely on load pulling for normal use by customers. This is substantiated by Andrews's use of a more traditional tuning technique in his complete system, where oscillation tuning is provided by summing a functional tuning voltage and a correction voltage and applying the sum to a single input of this oscillator. This permits Andrews to obtain a larger correction range than would be possible with load pulling, but still suffers from the limitation of a reduced functional tuning range since the functional tuning voltage and correction voltage are still being summed, as explained above. Thus, although Andrews's approach may reduce the amount of tuning required later when in normal use by a customer, it does not address the issue of how to provide multiple frequency control mechanisms with sufficient control range for each, given the limited and finite tuning range of an oscillator's frequency control input. Basically, Andrews does not show how, for example, sufficient temperature compensation control and function frequency control may be achieved within the limited range of the oscillator's frequency control input.

4. Please replace the paragraph beginning at page 5, line 17, which starts with " Each tuning circuit preferably consists of two varactor **", with the following amended paragraph:**

Each tuning circuit preferably consists of two varactor diodes, with their respective cathode electrodes coupled to each other and to their corresponding control input. Since each tuning circuit is connected in parallel to the resonator, the frequency pull range of any one tuning circuit is not limited by the pull range of any other tuning circuit. Thus, one tuning circuit may be ~~dedicate~~ dedicated to

provide frequency compensation control, while not reducing the pull range of the remaining functional frequency control tuning circuits.

5. Please replace the paragraph beginning at page 5, line 31, which starts with " Alternatively, the temperature compensation circuit may be analog **", with the following amended paragraph:**

Alternatively, the temperature compensation circuit may be analog based using multiple first and second modules. Preferably, the first modules provide temperature sensitive signals that are directly proportional to temperature, and the second modules provide temperature sensitive signals that are inversely proportional to temperature. The outputs of first and second modules are combined, i.e. summed, to construct a composite temperature sensitive signal. Further preferably, each module can have its signal strength adjusted, and can be assigned a temperature offset. The temperature offset is effective for preventing a module from outputting a temperature sensitive signal until the assigned temperature offset is reached. By appropriate selection of the number of first and second modules, appropriate assignment of signal strength and temperature offset values, a composite temperature sensitive signal may be constructed to have a shape that is the inverse of the frequency-versus-temperature characteristic curve of an oscillator.

6. Please replace the paragraph beginning at page 14, line 17, which starts with " Since in the presently preferred embodiment, it is not necessary **", with the following amended paragraph:**

Since in the presently preferred embodiment, it is not necessary for signal generator SGr to have a temperature offset T_2 to ~~achieved~~ achieve a concave-up shape for temperature compensation input VTEMP, temperature offset circuit T_{offset_r} is not used in the below-described embodiment of the present invention, and is omitted from more detailed views of the present embodiment. However, it is to be understood that if it were required, T_{offset_r} may be implantation in a similar manner to that of temperature offset circuit T_{offset_m}, described below.

7. Please replace the paragraph beginning at page 15, line 17, which starts with " As shown, when sub-signal DPT is activated **", with the following amended paragraph:**

As shown, when sub-signal DPT is activated, temperature compensation input VTEMP begins to ~~separates~~ separate from sub-signal IPT. Temperature compensation input VTEMP then begins curving upwards as sub-signal DPT increases and sub-signal IPT decreases with temperature. As higher temperatures are reached, sub-signal IPT approaches zero while sub-signal DPT continues to rise, and temperature compensation input VTEMP eventually begins following curve DPT as sub-signal IPT becomes increasingly smaller. This results in temperature compensation input VTEMP having a concave-up shape, as desired for compensating the frequency-versus-temperature characteristic curve of Fig. 7. By appropriate selection of the relatively strengths of sub-signals IPT and DPT, and by appropriate selection of temperature offset T1, temperature compensation input VTEMP can be made to have its minimum point P' at temperature Tc to coincide with the maximum point P of the frequency-versus-temperature characteristic curve of Fig. 7.

8. Please replace the paragraph beginning at page 19, line 24, which starts with " With reference with Fig. 13, a transistor level implementation **", with the following amended paragraph:**

With reference with Fig. 13, a transistor level implementation of the present temperature compensation circuit 19 is shown. All elements similar to Figs. 10-12 have similar reference characters and are described above. As it is known in the art, CTAT and PTAT reference circuits make use of the parasitic PNP transistor found in an MOS n-well process. Typically, the emitter is defined by the P+ implant, the ~~based~~ base is comprised by the n-well, and the collector is formed by the p-type substrate. In a typical ~~a~~ configuration, the parasitic transistor's base is tied to the substrate, which functions as its collector. This collector is coupled to Vss. This results in the parasitic PNP transistor being diode connected. Exemplary CTAT reference sources 97 and 99, and exemplary PTAT reference source 96 preferably use typical circuit structures based on this type of parasitic PNP transistor.

9. Please replace the paragraph beginning at page 20, line 34, which starts with "Returning now to the structure of variable oscillator 6, Fig. 15 shows"**, with the following amended paragraph:**

Returning now to the structure of variable oscillator 6, Fig. 15 shows further detail of the preferred construction of resonant circuit 1. First tuning circuit 11 preferably consists of first and second varactors V1 and ~~V1~~ V2 with their respective cathodes coupled to each other and to temperature compensation input VTEMP. Similarly, second tuning circuit 13 preferably consists of third and fourth varactors V3 and V4 with their respective cathodes coupled to each other and to functional frequency control input VCTL. The anodes of varactors V1 and V3 are coupled together and to one end of resonator 9. Likewise, the anodes of varactors V2 and V4 are couple together and the other end of resonator 9, such that varactor pair V1/V2, varactor pair V3/V4 and resonator 9 are coupled in parallel. As it is known in the art, varactors are variable diodes whose capacitance value is modulated by an applied voltage across them. Thus, by adjusting the voltage potential of VTEMP and/or VCTL, one can adjust their capacitive value, i.e. the reactance, of respective tuning circuits 11 and 13. By so doing, one can pull the resonant frequency of resonator 9 and thereby tune oscillator 6. In the present case, the varactors are connected as shown to isolate the DC control voltages of VTEMP and VCTL from the operation of oscillator 6.